

Appendix

COMMITTEE MEMBER BIOGRAPHICAL INFORMATION

Albert L. Page (Chair) is Professor of Soil Science and Chemistry and Chair of the Department of Soil and Environmental Sciences at the University of California at Riverside. Dr. Page received his B.A. in chemistry from the University of California at Riverside and his Ph.D. in soil science from the University of California at Davis. His current research interest is on the fate of trace elements when applied to soils in the form of environmental wastes. Dr. Page was a member of the National Research Council's Committee on Irrigation Induced Water Quality Problems.

Abateni Ayanaba is Manager of Agricultural Research and Seed Quality Management at Del Monte Corporation. He is responsible for the management of varietal development, plant pathology, soil microbiology, and agricultural research; seed quality programs on crops of interest to Del Monte; and development of biocontrols for pea and bean diseases. Dr. Ayanaba is a Soil Microbiologist with more than 20 years of broad-based domestic and international experience, emphasizing biocontrol, microbial ecology and physiology, and plant-microbe interactions. He earned his B.S. in plant and soil sciences from the University of Massachusetts, and his M.S. and Ph.D. in soil microbiology from Cornell University.

Michael S. Baram is Professor and Director of the Center for Law and Technology at Boston University School of Law, and Professor of Health Law at Boston University School of Public Health. He is also a partner in Bracken and Baram, a Boston law firm specializing in environmental, health, and energy law. Mr. Baram received his B.S. from Tufts University, and his LL.B. from Columbia University Law School. His research interests include corporate risk management (facility accidents, hazardous wastes, product safety, etc.); risk communication law and information policy; biotechnology legal and policy issues; and use of risk assessment and scientific evidence for decision-making in regulatory, judicial, and corporate contexts.

Gary W. Barrett is Odum Professor of Ecology and Director of the Institute of Ecology at the University of Georgia. He received his B.S. in biology from Oakland City College in Indiana, M.S. in biology from Marquette University, and Ph.D. in zoology from the University of Georgia, Athens. Dr. Barrett's research interests include stress effects (e.g., pesticides, fertilizer, sludge, or fire) on ecosystem dynamics; mammalian population dynamics; applied ecology; agroecosystem ecology; integrated pest management; restoration ecology; and landscape ecology. He is a member of the American Institute of Biological Sciences, Association of Ecosystem Research Centers, and the Ecological Society of America, among others.

William G. Boggess is head of the Department of Agricultural and Resources Economics at Oregon State University, Corvallis. He has a B.S. in agricultural business and a Ph.D. in agricultural economics from Iowa State University. His research interests include the interactions between agriculture and the environment with emphasis on water allocation, water pollution and environmental policy. In addition, he is interested in applied decision theory under risk and uncertainty, and stochastic/dynamic simulation and optimization techniques. Dr. Boggess was elected vice president of the Southern Agricultural Economics Association for 1993, and received the society's Distinguished Professional Contribution Award for Research in 1987.

Andrew C. Chang is Professor in the Department of Soil and Environmental Sciences, and Director of the Kearney Foundation for Soil Science at the University of California, Riverside, California. He received his Ph.D. in Agricultural Engineering from Purdue University. His areas of research include the land application of municipal wastes, environmental chemistry of phosphorus, physics and chemistry of organic pollutants, and methodology of establishing land disposal criteria. He has conducted a study for the World Health Organization on Human Health-Related Chemical Standards for using Reclaimed Wastewater for Crop Irrigation and Sewage Sludges for Fertilizer. He has served on several state and federal committees for risk assessment of municipal sludge disposal. Dr. Chang received the 1991 U.S. Environmental Protection Agency Sludge Beneficial Use Award for research, and the 1991 U.S. Department of Agriculture Superior Service Award for Natural Resource and Environment.

Robert C. Cooper is Vice President of BioVir Laboratories in Benicia, CA. He received his Ph.D. and M.S. in microbiology and public health from Michigan State University and a B.S. in public health from the University of California at Berkeley. He is Professor Emeritus at the Department of Biomedical and Environmental Health Services, School of Public Health at the University of California at Berkeley. Dr. Cooper's research interests include environmental health, wastewater reuse, microbiology, and effects of water quality on human health. Dr. Cooper participated in the National Research Council's Committee to Review the USGS National Water Quality Assessment Pilot Program.

Richard I. Dick is the Joseph P. Ripley Professor of Engineering in the Civil Engineering Department at Cornell University. He received his B.S. in civil engineering from Iowa State University, M.S. in sanitary engineering at State University of Iowa, and Ph.D. in environmental engineering at University of Illinois. Dr. Dick's research interests are sludge treatment, utilization, and disposal. He is a member of the Association of Environmental Engineering Professors, Water Pollution Control Federation, American Water Works Association, and the International Association on Water Quality, among

others. Dr. Dick served on the National Research Council's Committee on a Multimedial Approach to Municipal Sludge Management, and was a member of the National Research Council U.S./U.S.S.R. Task Group on External Utility Systems.

Stephen P. Graef is Director of Technical Services for Western Carolina Regional Sewer Authority where he is responsible for collection, treatment, solids reuse and disposal, laboratory, and industrial waste pretreatment and engineering. He received his B.S. in civil engineering from Valparaiso University, M.S. in environmental health engineering from the University of Cincinnati, and Ph.D. in environmental systems engineering from Clemson University. Previously, Dr. Graef was Director of Operation at Milwaukee Metropolitan Sewerage District. He is a member of the Water Environment Federation, American Academy of Environmental Engineers, American Society of Civil Engineers, and the International Association of Water Pollution Research and Control.

Thomas E. Long is a Wastewater Management Specialist for the Washington State Department of Health where he is responsible for community environmental health programs, and for promulgating on-site sewage treatment regulations. He is also a liaison with the Department of Ecology, revising best management practice for agricultural application of biosolids. Mr. Long holds a B.A. in environmental science from the University of West Florida. He is a member of the Australian Water and Wastewater Association, International Association on Water Pollution Research and Control, and the Water Pollution Control Federation.

Catherine St. Hilaire is Director of Regulatory Affairs at Hershey Foods Corporation. She earned her B.S. in science education from West Virginia University, and her Ph.D. in microbiology from the College of Medicine, Pennsylvania State University. Her expertise is in the areas of cancer research, toxicological evaluations, health risk assessments, and regulatory analysis. Prior to joining Hershey Foods in 1990, Dr. St. Hilaire was a Principal of ENVIRON Corporation where she was involved in a number of projects related to the public health risks of environmental chemicals. She served as a Staff Officer for the National Research Council where she worked on a number of reports including Risk Assessment in the Federal Government: Managing the Process. Dr. St. Hilaire is a member of the American Association for the Advancement of Science, Society of Toxicology, Society for Risk Analysis, and the American College of Toxicology.

JoAnn Silverstein is Associate Professor in the Department of Civil, Environmental and Architectural Engineering at the University of Colorado, Boulder. She earned a B.A. in psychology from Stanford University and a Ph.D., M.S., and B.S. in civil engineering from the University of California at Davis. Her research interests include the application of biological processes to water, wastewater, and sludge treatment; kinetic and process modeling of degradation of toxic organic compounds by mixed communities of microorganisms; biological oxidation and reduction of nitrogen; and the use of pH and oxidation-reduction potential sensors to control biological processes. She is a registered professional engineer in the State of Colorado. She is a member of the American Society of Civil Engineers, International Association for Water Pollution Research Control, American Water Works Association, Water Pollution Control Federation, American Society for Microbiology, Association of Environmental Engineering Professors, and the Society of Women Engineers.

Sarah Clark Stuart is a program officer with the Pew Charitable Trusts in Philadelphia and is a private environmental consultant. She earned her B.A. in botany with an emphasis on plant ecology from Pomona College and her M.F.S. from the Yale School of Forestry and Environmental Studies with an emphasis in soil and water science. She was Staff Scientist and Co-Program Head for the Environmental Defense Fund's Eastern Water Program where she was involved with research, writing and advocacy on local and national coastal water pollution issues, including sewage sludge management, wastewater treatment, contaminated sediments, and ocean disposal and dredge material.

Paul E. Waggoner is Distinguished Scientist and former Director of the Connecticut Agricultural Experiment Station in New Haven. He earned his S.B. from the University of Chicago, and his M.S. and Ph.D. from Iowa State University. Dr. Waggoner's research interests include agriculture, plant pathology, and the effect of the environment on plants, especially plant diseases. He chaired a Council for Agricultural Science and Technology Task Force on Preparing U.S. Agriculture for Global Climate Change. He has been a member of several National Research Council committees, and chaired a subpanel of the Committee on Policy Implications for Greenhouse Warming. Dr. Waggoner is a member of the National Academy of Sciences, American Meteorology Society, American Society of Agronomy, and American Phytopathological Society.